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Claims

1. An isolated polypeptide comprising an unbroken sequence of amino acids from SEQ ID. NO. 1, or 2, characterised by an ability to complex with a major histocompatibility complex molecule type HLA-A2, preferably HLA-A2.1.

2. An isolated polypeptide comprising an unbroken sequence of amino acids from SEQ. ID. NO. 1, or 2, characterised by an ability to elicit an immune response from human lymphocytes.

3. A nonapeptide comprising an unbroken sequence of amino acids from SEQ. ID. NO. 1, or 2, wherein the amino acid adjacent to the N-terminal amino acid is L or M, preferably L, and the C-terminal amino acid is L, V, or I, preferably L.

4. A nonapeptide as claimed in claim 3, wherein the amino acid in position 3 is Y and/or the amino acid in position 4 is D and/or the amino acid in position 5 is G and/or the amino acid in position 7 is E and/or the amino acid in position 8 is H.

5. A polypeptide as claimed in any one of claims 1-4, other than a nonapeptide having any one of amino acid sequences:-

(a) FLLFKYQMK;

(b) FIEGYCTPE; or

(c) GLEGAQAPL.

6. A polypeptide as claimed in any one of claims 2-5, further characterised by an ability to complex with a major histocompatibility complex molecule type HLA-A2, preferably HLA-A2.1.

7. A decapeptide comprising a nonapeptide as claimed in any of claims 3-5 and, preferably, an unbroken sequence of amino acids from SEQ. ID. NO. 1, or 2.

8. A nonapeptide having the amino acid sequence GLYDGMEHL or GLYDGREHS, preferably GLYDGMEHL.

9. A decapeptide having the amino acid sequence GLYDGMEHLI or GLYDGREHSV, preferably GLYDGMEHLI.

10. An isolated polypeptide of up to about 93 amino acids in length, characterised by comprising a nonapeptide or a decapeptide as claimed in any of claims 3-9.

11. A polypeptide as claimed in claim 10 comprising of an unbroken sequence of amino acids from SEQ. ID. NO. 1, or 2.

12. A polypeptide as claimed in any of the preceding claims, wherein the unbroken sequence is from SEQ. ID. NO. 1.

13. A polypeptide as claimed in any of the preceding claims and capable of eliciting an immune response from human lymphocytes.

14. A polypeptide as claimed in claim 13 and capable of eliciting an immune response from human lymphocytes when complexed with a major histocompatibility complex molecule type HLA-A2, preferably HLA-A2.1.

15. A polypeptide as claimed in claim 13 or claim 14, wherein said immune response is an cytolytic response from human T-lymphocytes.

16. An isolated polypeptide or protein comprising a polypeptide as claimed in any of claims 1-15, wherein the amino acid sequence of said isolated polypeptide or protein is not that set out in either of SEQ. ID. NOs. 1 and 2 or that coded for by nucleotides 334-918 of SEQ. ID. NO. 7.

17. An isolated polypeptide or protein which is a functionally equivalent homologue to a polypeptide or protein as claimed in any of claims 1-16, wherein the amino acid sequence of said isolated polypeptide or protein is not that set out in

either of SEQ. ID. NOs. 1 and 2 or that coded for by nucleotides 334-918 of SEQ. ID. NO. 7.

18. An isolated nucleic acid molecule comprising a nucleotide sequence coding for a polypeptide or protein as claimed in any of claims 1-16, or a complimentary nucleotide sequence, wherein said nucleotide sequence is not that set out in any of SEQ. ID. NOs. 3, 4, 5, 6 or 7.

19. A nucleic acid molecule as claimed in claim 18 and comprising an unbroken sequence of nucleotides from SEQ. ID. NO. 3, 4 or 5, or a complimentary sequence, or an RNA transcript of said nucleic acid molecule.

20. A nucleic acid molecule as claimed in claim 18 or claim 19, wherein said nucleotide sequence encodes a plurality of epitopes or a polytope.

21. An expression vector comprising a nucleic acid molecule as claimed in any of claims 18-20 operably linked to a promoter.

22. An expression vector as claimed in claim 21, further comprising a nucleotide sequence coding for a major histocompatibility complex molecule type HLA-A2, preferably HLA-A2.1, a cytokine or a co-stimulatory molecule, or a bacterial or viral genome or a portion thereof.

23. A host cell transformed or transfected with an expression vector as claimed in claim 21 or claim 22.

24. A host cell as claimed in claim 23, transformed or transfected with an expression vector coding for a major histocompatibility complex molecule type HLA-A2, preferably HLA-A2.1, a cytokine or a co-stimulatory molecule.

25. A polypeptide-binding agent which selectively binds or is specific for an isolated polypeptide or protein as claimed in any of claims 1-17.

26. A polypeptide-binding agent as claimed in claim 25, comprising an antibody, preferably a monoclonal antibody or an antibody fragment specific for an isolated polypeptide as claimed in any of claims 1-17.

27. A polypeptide-binding agent as claimed in claim 25 or claim 26 which selectively binds or is specific for a complex of a polypeptide as claimed in any of claims 1-17 and a major histocompatibility complex molecule type HLA-A2, preferably HLA-A2.1, but which does not bind said major histocompatibility molecule alone.

28. A polypeptide-binding agent as claimed in any of claims 25-27, comprising a cytolytic T-cell which is specific for a complex of a polypeptide as claimed in any of claims 1-17 and a major histocompatibility complex molecule type HLA-A2, preferably HLA-A2.1.

29. A polypeptide or protein as claimed in any of claims 1-17, an isolated nucleic acid molecule as claimed in any of claims 18-20, an expression vector as claimed in either of claims 21 or 22, a host cell as claimed in either of claims 23 or 24, or a polypeptide binding agent as claimed in any of claims 25-28, for use in the therapy, prophylaxis or diagnosis of tumours.

30. A pharmaceutical composition for the prophylaxis, therapy or diagnosis of tumours comprising a polypeptide or protein as claimed in any of claims 1-17, a nucleic acid molecule as claimed in any of claims 18-20, an expression vector as claimed in either of claims 21 or 22, a host cell as claimed in either of claims 23 or 24, or a polypeptide binding agent as claimed in any of claims 25-28, optionally in admixture with a pharmaceutically acceptable carrier and optionally further comprising a major histocompatibility molecule type HLA-A2, preferably HLA-A2.1.

31. A pharmaceutical composition for the prophylaxis, therapy or diagnosis of tumours comprising a polypeptide or protein as claimed in any of claims 1-17 complexed with a major histocompatibility molecule, HLA, and presented on the

surface of an APC, preferably a dendritic cell, wherein said complex is formed by pulsing said APC with polypeptide or protein.

32. A cell, preferably an APC, and more preferably, a dendritic cell, which has been pulsed with a polypeptide or protein as claimed in any of claims 1-17 to present on its surface said polypeptide or protein as a complex with a major histocompatibility molecule, HLA.

33. A pharmaceutical composition as claimed in any of claims 30 and 31 further comprising a co-stimulatory molecule.

34. A method of diagnosing disease, preferably cancer, comprising contacting a biological sample isolated from a subject with an agent that is specific for a polypeptide or protein as claimed in any of claims 1-17, or a nucleic acid molecule as claimed in any of claims 18-20, and assaying for interaction between the agent and any of the polypeptide, protein or nucleic acid molecule either free in or forming an integral part of the sample as a determination of the disease.

35. A method as claimed in claim 34, wherein the agent is a polypeptide-binding agent as claimed in any of claims 25-28.

36. A method of producing a cytolytic T-cell culture reactive against tumour cells, comprising removing a lymphocyte sample from an individual and culturing the lymphocyte sample with a polypeptide or protein as claimed in any of claims 1-14, an expression vector as claimed in either of claims 21 or 22, or a host cell as claimed in either of claims 23 or 24.

37. A product comprising cytolytic T-cells reactive against a tumour cell expressing an antigen comprising a polypeptide or protein as claimed in any of claims 1 to 17, for use in the prophylaxis, therapy or diagnosis of tumours.

38. A product as claimed in claim 37 and obtained or obtainable by a method as claimed in claim 36.

39. A method of treating tumours in a patient comprising administering a composition as claimed in any of claims 29, 30, 31, 33, 37 or 38 to the patient in an amount effective to control or prevent tumour growth.